In the popular press and in academic journals, the terms "telecommuter," "homebased business," "remote work," "homeworker" and other labels flourish. Sometimes these terms refer to the same type of work or worker, other times not. A newspaper journalist may write a column on "telecommuters," a name originally coined by Jack Nilles of University of Southern California's Center for Futures Research, in reference to people who do their work on computers at home, while a magazine writer might use the term to refer to people who work on computers at home and disseminate and receive their work through a modem. A survey might sample company employees who work at home, whether or not on a computer, and refer to them as "telecommuters." The lack of an accepted name and definition for people "who work out of their homes for paid labor" typifies the occupational variability, invisibility, and lack of identification and coherence of this "workforce."

Yet a clear label and definition has not deterred the creation of a number of networks and organizations, such as the Association of Electronic Cottagers, National Alliance of Homebased Businesswomen, National Association for the Cottage Industry, and the Work-at-Home Special Interest Group of CompuServe Information Services. Newsletters abound, such as Computer Entrepreneur, Telecommuting Review, Cottage Connection, and National Home Business Report. Marketing firms such as Dun's Marketing Services sell mailing lists of homeworkers; Dun's call theirs the "Cottage Industry File." Zoning ordinances and other federal policies define and create regulations addressing this workforce.

To derive clearer terms I propose using 4 characteristics to define and differentiate the myriad individuals who work out of their homes. They include those people (1) involved in a non-farm business as the additional, secondary use of their dwelling unit to produce or provide goods or services for economic gain; (2) where the home is a regular setting for work, whether it be the primary or secondary one (this may be judged so by the number of work hours invested, or one's subjective orientation); (3) whether the person is employed by another person or company, or is self-employed; and (4) where the work may or may not involve telecommunications (exclusive of telephone) equipment for producing, receiving, disseminating or controlling goods and/or services.
In this report, I use the term **professional homeworker** to refer to people who (1) work out of their homes for paid labor, (2) either on a part-time or full-time basis but where the home is the primary workplace, (3) who are either self-employed or company-employed, and (4) who may or may not use telecommunications equipment. The term 'professional' primarily designates people who are being paid for their labor, and does not refer to an occupational subcategory. A shorter term, **homeworker**, has been used by others to refer to people who work out of their home not for wage or pay, and who are primarily involved in childcare and homecare. I use this shorter term in this report but analogous to professional homeworkers. **Homebased teleworkers** are professional homeworkers who use telecommunications equipment in their home for producing, receiving, disseminating or classifying goods and/or services. I reserve the term **telecommuter** to refer to homebased teleworkers who receive and disseminate their goods/services by telecommunication equipment.

**DEMOGRAPHICS**

Estimates of the number of professional homeworkers in this country vary due to the multiple definitions and labels, and the means of sampling, counting and estimating. One of the most widely cited statistics is from a study conducted by the Chamber of Commerce in 1983. Of the fifteen million businesses in the United States who filed IRS reports under Schedule C (Sole Proprietorship Returns), ten million listed their home address as their place of business (Butler & Getzels, 1985). This may be an undercalculation since people operating without retail sales tax permits or business permits, those hoping to avoid taxes, and those fearing legal and zoning entanglements may be reluctant to notify the IRS of their operation. The U.S. Small Business Administration estimates 5 million people run homebased businesses. An analysis from the 1980 U.S. Census, based on a question of travel to work, estimates 2 million Americans with homebased businesses (Horvath, 1986). A survey by AT&T projects 10 million households are involved in homebased businesses, with fewer than one-third employing someone outside the family in the business (AT&T consumer products conducts market survey, 1984). A recent survey by the Bureau of Labor Statistics projected 8.4 million (non-farm) persons worked at home at least 8 hours a week (Horvath, 1986).

A more recent national survey by Electronic Survey Unlimited (ESU) estimates that approximately 13.3 million people work at home (i.e. are professional homeworkers) at least part time (Schwartz, 1987). These professional homeworkers were twice as likely than office workers to own a computer. Over 600,000 households use a modem and 240,000 households rely substantially on computer communication for income-producing work.
A subpopulation of the professional homework force are the corporate-employed teleworkers. ESU estimates that there are 450 informal and formal telecommuting and remote work site programs involving 100,000 individuals (see Table 1 for a partial list of companies with such programs). Gil Gordon (1984), a telecommuting consultant and publisher of Telecommuting Review, estimates that there are 3000 corporate-employed teleworkers, and Jack Nilles (1976) estimates 30,000. Based on an analysis of the 1980 census, Kraut and Grambsch (1985) estimate 10,000 homebased teleworkers.

Table 1
Some Companies with Work-At-Home Programs
(Adapted from Atkinson, 1985)

American Express Co., Inc.
Bank of America
Blue Cross-Blue Shield of South Carolina
Chase Manhattan Bank
Citibank
Control Data Corporation
Data General Corporation
Digital Equipment Corporation
Equitable Life Insurance
F International (Britain)
Federal Reserve Bank
First National Bank of Chicago
Freight Data Systems Honeywell, Inc.
Hartford Insurance Group
International Business Machines
Island Graphics
Lanier Business Products
Arthur D. Little, Inc.
Manufacturers Hanover Bank & Trust Co.
McDonald's Corporation
Metropolitan Life Insurance Company
Mountain Bell
New York Telephone Pacific Bell
J.C. Penney Company
Rising Star Industries
Standard Oil Company of Indiana
Travelers Corporation
Union Mutual Life Insurance Company
United Air Lines
Walgreen Company
Weyerhaeuser Company
Xerox Corporation
The number of homebased teleworkers who are entrepreneurs shows strong signs of growth. One indicator is the number of personal computers purchased for use in the home. Future Computing, a Dallas-based research firm, found in a 1985 survey that 60% of consumers buying home computers cited professional work as the primary reason for purchase; this is up from 20% in a 1982 survey. Although the purchase of home computers is declining (from 5 million in 1982 to 3.2 million in 1985), this still represents an increasing and significant number of people buying home computers for work purposes (Mitchell, 1985).

FORECASTS AND TRENDS

Not having an accurate estimate of the current size of the professional homework force has not deterred predictions of future size. The World Futures Society (Howland, 1982) predicts that one-quarter of the white collar workforce, or 34% of the industrialized workforce, will be working out their homes by the year 2000. Jack Nilles estimates that by the year 2000 twenty million individuals will be working out of their homes at least 2 or 3 days a week (Nilles et al., 1976).

Forecasts are based on projected trends in the structure of work, in the changing dimensions and values of family and personal life, and advances in technology. These include:

The Structure of Work

Increase of jobs in information services which do not need direct face-to-face contact. Currently the information sector comprises 56% of this country's GNP (Rushton, 1985; Schwartz, 1987). These people use information technology to create and exchange informational products. A taxonomy of information occupations is listed in Table 2.

The conversion from a manufacturing-based economy to a service-based one. A service/information economy is not conducive to massive bureaucratic organization (Naisbitt, 1982). Today service employment is almost two-thirds of the work sector (Dowall and Salkin, 1986). White-collar work involved 52% of the workforce in 1980, up from 37% in 1950.

Increase in part-time work. Eighteen million people are part-time workers, the majority of these being women. From 1970 to 1982 the part-time labor force increased by 58% while the overall U.S. labor force increased by 26%. Twenty-five percent of clericals work part-time (Gregory, 1985).
Table 2
Information Occupations
(Adapted from Rushton, 1985)

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
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<tbody>
<tr>
<td><strong>Information Producers</strong></td>
<td>Chemists, Engineers</td>
</tr>
<tr>
<td>Scientific &amp; Technical</td>
<td>Sales Personnel, Buyers</td>
</tr>
<tr>
<td>Market Search &amp;</td>
<td>Surveyors, Quality Inspectors</td>
</tr>
<tr>
<td>Coordination</td>
<td>Accountants, Lawyers</td>
</tr>
<tr>
<td>Information Gatherers</td>
<td>Doctors, Veterinarians</td>
</tr>
<tr>
<td>Consultative Services</td>
<td></td>
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<tr>
<td>Health-Related</td>
<td></td>
</tr>
<tr>
<td>Consultative Services</td>
<td></td>
</tr>
<tr>
<td><strong>Information Distributors</strong></td>
<td>Teachers, Lecturers</td>
</tr>
<tr>
<td>Educators</td>
<td></td>
</tr>
<tr>
<td>Public Information</td>
<td>Librarians, Archivists</td>
</tr>
<tr>
<td>Disseminators</td>
<td>Newspaper Editors, T.V. Directors</td>
</tr>
<tr>
<td>Communication Workers</td>
<td></td>
</tr>
<tr>
<td><strong>Information Processors</strong></td>
<td>Production Managers</td>
</tr>
<tr>
<td>Administrative &amp; Management</td>
<td>Factory &amp; Office Supervisors</td>
</tr>
<tr>
<td>Process Control &amp; Supervisory</td>
<td>Clerks, Bank Tellers</td>
</tr>
<tr>
<td>Clerical &amp; Related</td>
<td></td>
</tr>
<tr>
<td><strong>Information Infrastructure</strong></td>
<td>Computer Operators</td>
</tr>
<tr>
<td>Information Machine Workers</td>
<td>Mail Carriers, Phone Operators</td>
</tr>
<tr>
<td>Postal &amp; Telecommunications</td>
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</tr>
</tbody>
</table>

Corporations contracting work out, reducing permanent staff. Many companies expect future increases in small operating units, either independent firms or subsidiaries of larger organizations (Dowall and Salkin, 1986). In addition the development of a more entrepreneurial style of U.S. management will lead to a decline in middle management staff, some estimate as high as 30% (Thinning the managerial ranks, 1983).

Increase in entrepreneurial businesses. More and more people are expected to start their own businesses. The U.S. Small Business Administration estimates approximately 12.1 million people will be self-employed in 15 years, up from 7.5 million in 1985 (Johnson, 1987). Entrepreneurial job growth is expected high in the servicing industries, particularly computer programming, public
relations, software development, and janitorial services. Another indicator of this growth is the number of entrepreneurial courses offered in four-year colleges; up from 16 in 1970 to over 250 in 1984 (Atkinson, 1985). Student enrollment in entrepreneurial classes and programs is at an all time high (Brown, 1984). The Small Business Administration claims that the homebased business is the fastest growing sector of small businesses (Molidor, 1985). Almost 20% of the small businesses started each year begin in the home, and this percentage is increasing (Butler and Getzels, 1985).

The Values and Structure of Family/Personal Life

A growing segment of the workforce whose primary concern of occupational choice is less on the traditional values of money, success, and status, and more on the type of work and its integration with social and family life. Stanford Research Institute predicts that 27% of the adult population will hold these values by 1988 (Clutterbuck and Hill, 1981). Flextime is a work response initiated in recent years to people's demands for fitting work into their lifestyles. This demand for more self control over work is partially attributed to the higher educational levels of the workforce. Young people are increasingly interested in work involving ownership and personal development (Cross and Raizman, 1986).

Multiple career paths are replacing the traditional "20 year/gold watch" work arrangement for a significant proportion of the population (Cross and Raizman, 1986).

An increasing number of women in the paid labor force. In 1980 women accounted for 42% of the workforce population. Approximately 3 million women are business entrepreneurs. A 1977 Census Bureau survey estimates that 327,000 women own and operate their own businesses from home (Lublin, 1984). Between 1974 and 1984 women have gone into business for themselves at a rate 6 times higher than that of men (Garland, 1985).

Partially the result of this entry of women into the workforce, a demand for out-of-home childcare services, a demand that currently outstrips supply. There is one daycare position open for every 10 children who need placement (Gregory, 1985). The average annual cost of daycare for two children is $4,000, which is one-third the average working woman's salary (Gregory, 1985).

An unwillingness among workers to relocate their homes for a job. Approximately 42% of executives are reluctant to relocate, and 7% would refuse to do so (Want to move?, 1985).
An increasing number of families who are more involved and comfortable with technology. The Yankee Group, a research firm, refers to these families as "Taffies" (technologically advanced family). Demographers project that within 10 years, one-third of the population will have a lifestyle oriented toward using and owning high technology equipment and who seek more control over their work and lives (Gluckin, 1985).

Technology Trends

The declining cost of micro and personal computers and the proliferation of "user-friendly" software programs.

Commercial development of "smart homes," i.e. where computer technology is used to control the home environment (e.g. thermostat settings, appliances, energy consumption) as well as to have an integrated computer system. Such developments have been built in Eaglecrest, California (Perry, 1985; Wilson, 1985), and in Ridgewood, New Jersey (Cross and Raizman, 1985).

Government and business policies also are making it easier for people to work out of their homes. For example, a new state law in Alaska allows legislators to participate in committee meetings from their homes via telecommunications. Women prisoners in Arizona take reservation bookings for Best Western Hotel from their prison cells (a strange, at best, home environment), using company-supplied computer terminals (Cross and Raizman, 1985). Numerous municipalities are rewriting ordinances to address concerns of home occupations (Butler and Getzel, 1985).

A few companies are beginning to capitalize on remote work site trends. United Technological Building Systems Worldwide Business Centers, Headquarters Company (HQ), and Omni offices, located in cities nationwide, lease office space, services or equipment on either a daily, weekly or yearly basis. A director of HQ Chicago whom I talked with said that a sizeable number of her clients were professional homeworkers who rent conference rooms for a day for infrequent use, or have their mail delivered to the downtown location instead of to their homes.

ARE WE RETREATING TO THE PAST?

The attention the popular media has focused on professional homework often gives an impression that this is a new emerging phenomena. Actually, only in the last two centuries have people gone out of their homes for work in Western cultures. Professional homework is prevalent today for industrial/production work in third world countries, especially for women.
The cottage industry name was derived from 18th century England where an extended family would operate a business or factory in their country home. Merchant-manufacturers supplied materials and hired these families to produce goods which they would later pick up when completed.

This was similar in the United States, but its prevalence was on the decline by 1850 (Atkinson, 1985). By then the industrial revolution had started in this country, and more and more people were moving to cities. The "country cottage industry" was replaced by "sweatshops" in city tenements.

Attempts to shut down these city tenements occurred during the early 1900s. Critics of these sweatshops expressed concern about maintaining legislation such as child labor laws, health and safety standards, and minimum wage laws. By 1940, 19 states, the District of Columbia and Puerto Rico prohibited industrial homework. In 1943 the Fair Labor Standards Act was passed by Congress prohibiting home manufacturing in seven industries: jewelry, gloves and mittens, knitted outerwear, buttons and buckles, women's apparel, handkerchiefs, and embroideries. Exceptions were made for the aged, those in poor health, and those having to care for invalid household members.

Local zoning ordinances often extend the number and types of prohibited occupations. Between 80 to 90% of local planning agencies have ordinances regulating home occupations (Butler and Getzels, 1985; Ritzdorf, 1986) and most are moderately to exceptionally restrictive. For example, the Chicago zoning department has used zoning restrictions to prohibit working at home on a computer (Tazelaar, 1986). Officials in Smithtown, Long Island drafted a proposal to ban all home occupations (Brooks, 1983).

Yet the passage of these laws and ordinances do not eliminate professional homework. It is not uncommon to see a service-oriented occupation based in the home. In the T.V. series The Bill Cosby Show, for example, the father Dr. Cliff Huxtable maintains his medical practice in an office located in the basement of his home. Many of today's large service and industrial corporations started as homebased businesses. Table 3, adapted from Atkinson (1985), lists a number of well-established firms such as Hewlett-Packard, Apple Computer, and Baskin-Robbins Ice Cream which started at home!

Thus, homework itself is neither a recent phenomena nor need it be a retreat to the working conditions of earlier times. Critics of professional homework express concerns that the labor and health violations of the past are not repeated, that women's economic and employment gains do not regress, and that the mixture of domestic and work lives in one place does not deteriorate the quality of life in the home. The recent interest comes from the possibility of telecommunications to allow greater numbers of people from a wider number of occupations and employment statuses to work out of their homes. These projections of homework opportunities, coupled with the
concerns of repeating labor abuses of the past, mandate critical investigations of people's lives as they live and work under the same roof.

Table 3
Some Companies Which Started as Homebased Businesses
(Adapted from Atkinson, 1985)

**Hershey Food Corporation:** began by Milton Hershey in 1876, selling candy from his Pennsylvania home.

**Baskin Robbins Ice Cream Company:** began by Irvine Robbins, selling ice cream from the family farm in Washington.

**Everest & Jennings International:** began by Herbert Everest and Harry Jennings in 1933 with custom wheelchair construction from the Jennings' garage.

**Medtronic Inc.:** began by Earl Bakken and Palmer Hermundslie in 1949 out of their Minneapolis garage.

**Apple Computer:** began by Steven Jobs and Stephen Wozniak in the bedroom of Jobs' home in 1976.

**Hewlett-Packard Corporation:** began by William Hewlett and David Packard in 1938 out of the Packard's garage.

**Playboy Magazine:** began by Hugh Hefner at his kitchen table in 1955.